National Institute of Environmental Health Sciences

Extreme temperatures and mortality in the North of Spain

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Abstract:

Objective: To study the relationship between mortality and temperature in Cantabria, a Spanish region that includes both rural and urban areas. Methods: Meteorological data (2003-2006) were obtained from the Spanish Meteorological Agency and daily numbers of deaths were obtained from the Spanish Institute for Statistics. A graphical approach using locally weighted regression smoothing was used to explore the relationship between mortality and temperatures and to identify temperature thresholds; we estimated the excess of mortality due to extreme temperatures in both warm and cold periods using Poisson regression models, and we simulated a situation with increased temperatures. Results: Raising maximum or minimum temperatures by 1oC was associated with a 2% excess in mortality risk in the whole population throughout the warm period, and we found no effect in mortality on the cold season; almost all changes in mortality occur in people aged 65 or more. Women are more sensitive to temperature changes in the warmer months. Conclusions: The deleterious effect of increasing temperatures in summer is more pronounced than the beneficial effect of a similar increase in winter. © 2011 Swiss School of Public Health.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Meteorological Factors, Meteorological Factors, Precipitation, Temperature

Temperature: Extreme Cold, Extreme Heat, Fluctuations

Geographic Feature:

resource focuses on specific type of geography

Rural, Urban

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Europe

European Region/Country: European Country

Other European Country : Spain

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Morbidity/Mortality

Population of Concern: A focus of content

Population of Concern: ☑

populations at particular risk or vulnerability to climate change impacts

Elderly

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified